

Amendment and Response

Applicant: Hong-Jyh et al.

Serial No.: 10/799,910

Filed: March 12, 2004

Docket No.: 2004P50029US/I331.135.101

Title: ION IMPLANTATION OF HIGH-K MATERIALS IN SEMICONDUCTOR DEVICES

REMARKS

The following remarks are made in response to the Office Action mailed November 29, 2005. Claims 1-17 were rejected. With this Response, claims 6, 16, and 18-40 have been canceled, and claims 1, 7, 8, and 15 have been amended. Claims 1-5, 7-15, and 17 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 102

Claims 15-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Paton et al., U.S. Patent No. 6,703,277 ("Paton").

Claim 16 has been canceled. Amended independent claim 15 recites **a buffer layer implanted with a species between the gate electrode and the high-k gate dielectric layer**. Paton fails to teach or suggest this claim limitation.

In view of the above, Applicants respectfully submit that the above rejection of claim 15 under 35 U.S.C. § 102(e) be withdrawn. Dependent claim 17 further defines patentably distinct independent claim 15. Accordingly, Applicants believe this dependent claim is also allowable over the cited reference. Allowance of claims 15 and 17 is respectfully requested.

Claim Rejections under 35 U.S.C. § 103

Claims 1-7, 9-12, and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Paton in view of Kim et al., U.S. Patent No. 6,621,114 ("Kim").

Claim 6 has been canceled. Amended independent claim 1 recites **a buffer layer implanted with a species between the high-k material layer and the gate electrode**. Paton and Kim, either alone, or in combination, fail to teach or suggest this claim limitation.

In view of the above, Applicants respectfully submit that the above rejection of claim 1 under 35 U.S.C. § 103(a) be withdrawn. Dependent claims 2-5, 7, 9-12, and 14 further define patentably distinct independent claim 1. Accordingly, Applicants believe these dependent claims are also allowable over the cited references. Allowance of claims 1-5, 7, 9-12, and 14 is respectfully requested.

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Paton and Kim, as applied to claim 6 above, and further in view of Yu, U.S. Patent No. 6,867,101 ("Yu"). Dependent claim 8 further defines patentably distinct independent claim 1.

Amendment and Response

Applicant: Hong-Jyh et al.

Serial No.: 10/799,910

Filed: March 12, 2004

Docket No.: 2004P50029US/I331.135.101

Title: ION IMPLANTATION OF HIGH-K MATERIALS IN SEMICONDUCTOR DEVICES

Accordingly, Applicants believe this dependent claim is also allowable over the cited references. Allowance of claim 8 is respectfully requested.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Paton and Kim as applied to claim 1 above, and further in view of Kizilyalli et al., U.S. Patent No. 6,320,238 ("Kizilyalli"). Dependent claim 13 further defines patentably distinct independent claim 1. Accordingly, Applicants believe this dependent claim is also allowable over the cited references. Allowance of claim 13 is respectfully requested.

CONCLUSION

In view of the above, Applicants respectfully submit that pending claims 1-5, 7-15, and 17 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-5, 7-15, and 17 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Mark Peterson at Telephone No. (612) 573-0120, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

Dicke, Billig & Czaja
Fifth Street Towers, Suite 2250
100 South Fifth Street
Minneapolis, MN 55402

Amendment and Response

Applicant: Hong-Jyh et al.

Serial No.: 10/799,910

Filed: March 12, 2004

Docket No.: 2004P50029US/I331.135.101

Title: ION IMPLANTATION OF HIGH-K MATERIALS IN SEMICONDUCTOR DEVICES

Respectfully submitted,

Hong-Jyh Li et al.,

By their attorneys,

DICKE, BILLIG & CZAJA, PLLC

Fifth Street Towers, Suite 2250

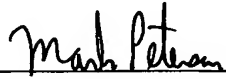
100 South Fifth Street

Minneapolis, MN 55402

Telephone: (612) 573-0120

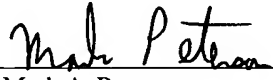
Facsimile: (612) 573-2005

Date: 2/28/2006
MAP:bac



Mark A. Peterson
Reg. No. 50,485

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 28 day of February, 2006.

By 

Name: Mark A. Peterson